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7590 Robert E. Bushnell Suite 300 1522 K Street, N.W. Washington, DC 20005		07/30/2007	EXAMINER TRAN, TUNG Q	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,235	<b>Applicant(s)</b> KIM, KI-WOOK	
	<b>Examiner</b> Tung Q. Tran	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 1 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/9/2004, 5/29/2007</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Specification Objections***

1. The disclosure is objected to because of the following informalities:

To clarify the disclosure, some acronyms specified in the specification should be spelled out: "DAMA" in lines 3, page 6; "PHPA" in line 9, page 10; "BSM" in line 2, page 14; "QCELP" in line 8, "EVRC", and "PCM" in line 9, page 16.

Applicant misspelled "memory 560" as "memory 510" in line 10, page 20.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 1 and 19 are objected to because of the following informalities:

Regarding claim 1, applicant misspelled "through" as "though" in line 16.

Regarding claim 19, applicant misspelled "through" as "though" in line 5.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the hardware alarm connecting unit" in lines 17-18. There is insufficient antecedent basis for this limitation in the claim.

Any claim not specifically addressed, above, is being rejected as incorporating the deficiencies of a claim upon which it depends.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 7-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent No. 6,421,714; hereinafter Rai) in view of LeCren (US Patent No. 6,999,320; hereinafter LeCren).

Rai discloses efficient mobility management scheme for a wireless internet access system (see the Title) comprising the following features.

Regarding claim 1, an apparatus for operating and maintaining a private mobile communication service system (Fig. 2) using an internet protocol (IP) network (see "capable of routing internet protocol" recited in col. 6, lines 18-21), the private mobile communication service network having a private base station controller (PBSC) (Fig. 2, base stations 36) and a base station transceiver subsystem (BTS) (Fig. 2, base stations 36), said apparatus comprising: a wireless system manager (WSM) (Fig. 2, MSC 40) for receiving operation/maintenance information from the pBSC (see user registers with a

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registration server in the MSC through a base station recited in col. 7, lines 50-53; see Fig. 14, Registration Request is sent to Foreign Registration Server) through the IP network (see "capable of routing internet protocol" recited in col. 6, lines 18-21), processing the operation/maintenance information, creating an operation/maintenance control signal, and transmitting the operation/maintenance control signal to the pBSC through the IP network (Fig. 14, see Foreign Registration Server processes information and sends back signals to the End System through the base station); a hardware alarm collection unit (see Fig. 4-6, Access Points 82) mounted on the pBSC (Fig. 4, Base Station 64) for collecting operation/maintenance information (see "take MAC layer frames" recited in col. 10, lines 50-51) from at least one board (see "antenna" recited in col. 10, lines 42-44) and outputting the operation/ maintenance information (see "relay them to a wireless hub" recited col. 10, lines 50-51), and for receiving an operation/maintenance control signal from said at least one board (Fig. 14, Agent Solicitation and Registration Request are sent to Foreign Agent which is in a base station (col. 7, lines 50-51)); and a base station controller main processor (BMP) (Fig. 4-6, Wireless Hubs 84) responsive to the operation/maintenance information being received from the hardware alarm collection unit (Fig. 4-6, Access Points 82) for ascertaining a link address and for transmitting the operation/maintenance information when the link address is the WSM (see frames are relayed to MSCIWf by MAC address filter table recited in col. 12, lines 32-36), and responsive to the operation/maintenance control signal being received from the WSM (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the

base station), through the IP network (see “capable of routing internet protocol” recited in col. 6, lines 18-21) for transmitting the operation/maintenance control signal to the hardware alarm connecting unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

Regarding claim 2, wherein the IP network is a Fast Ethernet link (see “Ethernet” recited in col. 11, lines 13-15).

Regarding claim 7, wherein the BMP (Fig. 4-6, Wireless Hubs 84) comprises: a local area network (LAN) interface for providing an interface with a LAN to allow an IP communication with the WSM (see “Ethernet” recited in col. 11, lines 13-15); an operation/maintenance information transmission unit (Fig. 4-6, Wireless Hubs 84) responsive to the operation/maintenance information being received from the hardware alarm collection unit for ascertaining the link address, and for transmitting the operation/maintenance information to the WSM through the LAN interface if the link address is the WSM (see frames are relayed to MSCIWF by MAC address filter table recited in col. 12, lines 32-36); and an operation/maintenance control signal transmission unit (Fig. 4-6, Wireless Hubs 84) for receiving the operation/maintenance control signal from the WSM through the LAN interface (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the base station), and for transmitting the operation/maintenance control signal to the hardware alarm collection unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

Regarding claim 8, wherein the operation/maintenance information transmission unit (Fig. 4-6, Wireless Hubs 84) comprises: an operation/maintenance information receiving unit for receiving the operation/maintenance information from the hardware alarm collection unit (see frames are relayed to MSCiWF by MAC address filter table recited in col. 12, lines 32-36); and a link address ascertaining unit for ascertaining the link address of the operation/maintenance information received from the operation/maintenance information receiving unit, and for transmitting the operation/maintenance information to the WSM through the LAN interface if the link address is the WSM (see frames are relayed to MSCiWF by MAC address filter table recited in col. 12, lines 32-36).

Regarding claim 9, wherein the operation/maintenance control signal transmission unit (Fig. 4-6, Wireless Hubs 84) comprises: an operation/maintenance control signal receiving unit for receiving the operation/maintenance control signal from the WSM (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the base station) through the LAN interface (see "Ethernet" recited in col. 11, lines 13-15); and an operation/maintenance control signal transmitting unit for transmitting the operation/maintenance control signal to the hardware alarm connecting unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

Regarding claim 10, a method of operating and maintaining a private mobile communication service system (Fig. 2) using an IP network (see "capable of routing internet protocol" recited in col. 6, lines 18-21), the private mobile communication

service network having a pBSC (Fig. 2, base stations 36) and a base station transceiver system (BTS) (Fig. 2, base stations 36), said method comprising the steps of: (a) ascertaining, at a base station main processor (BMP) (Fig. 4-6, Wireless Hubs 84), a link address of operation/maintenance information (see frames are relayed to MSCIWF by MAC address filter table recited in col. 12, lines 32-36) of at least one board (see "antenna" recited in col. 10, lines 42-44) collected by a hardware alarm collection unit (see Fig. 4-6, Access Points 82); (b) when the link address is ascertained to be a wireless system manager (WSM) (Fig. 2, MSC 40), transmitting the operation/maintenance information to the WSM (see frames are relayed to MSCIWF by MAC address filter table recited in col. 12, lines 32-36) through the IP network (see "capable of routing internet protocol" recited in col. 6, lines 18-21) and processing the operation/maintenance information at the WSM (Fig. 14, see Foreign Registration Server processes information and sends back signals to the End System through the base station); (c) creating an operation/maintenance control signal at the WSM and transmitting the operation/maintenance control signal to the BMP through the IP network (Fig. 14, see Foreign Registration Server processes information and sends back signals to the End System through the base station); and (d) transmitting, at the BMP, the operation/maintenance control signal to the hardware alarm collection unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

Regarding claim 11, wherein step (a) comprises: collecting, at the hardware alarm collection unit (see Fig. 4-6, Access Points 82), the operation/maintenance



information (see “take MAC layer frames” recited in col. 10, lines 50-51) of the board (see “antenna” recited in col. 10, lines 42-44) and transmitting the operation/maintenance information to the BMP (Fig. 4-6, Wireless Hubs 84); and ascertaining, at the BMP, the link address of the operation/maintenance information (see frames are relayed to MSCIWf by MAC address filter table recited in col. 12, lines 32-36).

Regarding claim 13, wherein step (d) comprises: receiving, at the BMP (Fig. 4-6, Wireless Hubs 84), the operation/maintenance control signal (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the base station) through the IP network (see “capable of routing internet protocol” recited in col. 6, lines 18-21); transmitting, at the BMP, the operation/maintenance control signal to the hardware alarm collection unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

Rai does not disclose the following features: regarding claim 1, generating a reset signal for said at least one board; regarding claim 10, wherein creating and outputting, at the hardware alarm collection unit, a reset signal for said at least one board; regarding claim 13, wherein creating and outputting, at the hardware alarm collection unit, a reset signal for said at least one board;

LeCren discloses dynamic reallocation of processing resources for redundant functionality (see the Title) comprising the following features.

Regarding claim 1, generating a reset signal for said at least one board (see “reset of the board or card” recited in col. 5, lines 37-39).

Regarding claim 10, wherein creating and outputting, at the hardware alarm collection unit, a reset signal for said at least one board (see "reset of the board or card" recited in col. 5, lines 37-39).

Regarding claim 13, wherein creating and outputting, at the hardware alarm collection unit, a reset signal for said at least one board (see "reset of the board or card" recited in col. 5, lines 37-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rai by using the features, as taught by LeCren, in order to restore failures of the board or card due to software error (LeCren: col. 5, lines 37-39).

7. Claims 3, 6, 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent No. 6,421,714) in view of LeCren (US Patent No. 6,999,320) and further in view of Park et al. (US Patent No. 7,058,019; hereinafter Park).

Rai and LeCren disclose the claimed limitations in paragraph 6 above.

In addition, Rai also discloses the following features:

Regarding claim 12, wherein step (b) comprises: when the link address is ascertained to be the WSM (Fig. 2, MSC 40), transmitting, at the BMP (Fig. 4-6, Wireless Hubs 84), the operation/maintenance information to the WSM (see frames are relayed to MSCIWf by MAC address filter table recited in col. 12, lines 32-36) through the IP network (see "capable of routing internet protocol" recited in col. 6, lines 18-21).

Rai and LeCren do not disclose the following features: regarding claim 3, wherein the WSM comprises: an operation function module for receiving the operation

information from the BMP, for providing operation functions including at least one of loading, configuration management and statistics measurement, and for creating and outputting the operation control signal; a maintenance function module for receiving the operation/maintenance information from the BMP, for providing a maintenance function including at least one of system status monitoring, system failure control and system tests, and for creating and outputting the operation/maintenance control signal; and a general function module for receiving the operation/maintenance information from the BMP through the IP network, for outputting the operation information to the operation function module, for transmitting the maintenance information to the maintenance function module, for receiving the operation/maintenance control signal from the operation module and the maintenance module, and for transmitting the operation/maintenance control signal to the BMP through the IP network; regarding claim 6, wherein the general function module comprises: a WSM initialization manager for creating and managing application parts required for operation of the WSM; a local area network (LAN) interface manager for processing a LAN connection, and data transmission and reception with the system; and a user interface manager for providing a graphic user matching function; regarding claim 12, receiving, at a general function module of the WSM, the operation/maintenance information through the IP network; transmitting, at the general function module, the operation information to an operation function module to process the operation information; and transmitting, at the general function module, the maintenance information to a maintenance module to process the maintenance information.

Park discloses method of transmitting data between compact control stations using Ethernet (see the Title) comprising the following features.

Regarding claim 3, wherein the WSM (Fig. 10, control station 10) comprises: an operation function module (Fig. 1, operation interface screen processing unit 13) for receiving the operation information from the BMP (Fig. 1, controller 20), for providing operation functions including at least one of loading, configuration management and statistics measurement, and for creating and outputting the operation control signal (see "managing the maintenance data" recited in col. 2, lines 64-67); a maintenance function module (Fig. 1, operation maintenance function processing unit 12) for receiving the operation/maintenance information from the BMP (Fig. 1, controller 20), for providing a maintenance function including at least one of system status monitoring, system failure control and system tests, and for creating and outputting the operation/maintenance control signal (see "processing the maintenance data" recited in col. 2, lines 60-64); and a general function module (Fig. 1, network matching unit 11) for receiving the operation/maintenance information from the BMP (Fig. 1, controller 20) through the IP network (see "Ethernet" recited in col. 2, lines 57-60), for outputting the operation information to the operation function module (see operation interface screen processing unit 13 receives and process data from network matching unit 11 recited in col. 2, lines 64-67), for transmitting the maintenance information to the maintenance function module (see operation maintenance function processing unit 12 receives and process data from network matching unit 11 recited in col. 2, lines 60-64), for receiving the operation/maintenance control signal from the operation module and the maintenance

module (see data are transmitted to network matching unit 11 to/from operation maintenance function processing unit 12 and operation interface screen processing unit 13 recited in col. 2, lines 57-67), and for transmitting the operation/maintenance control signal to the BMP through the IP network (see data are transmitted to controller 20 through the network matching unit using the Ethernet recited in col. 2, lines 57-60).

Regarding claim 6, wherein the general function module (Fig. 1, network matching unit 11) comprises: a WSM initialization manager for creating and managing application parts required for operation of the WSM (see network matching unit 11 initiated connection to controller 20 recited in col. 8-11); a local area network (LAN) interface manager for processing a LAN connection, and data transmission and reception with the system (see "Ethernet" recited in col. 2, lines 57-60); and a user interface manager for providing a graphic user matching function (see "operator interface function" recited in col. 4, lines 28-30).

Regarding claim 12, receiving, at a general function module of the WSM (Fig. 1, network matching unit 11), the operation/maintenance information (see "transmit/receive operation maintenance data" recited in col. 2, lines 57-60) through the IP network (see "Ethernet" recited in col. 2, lines 57-60); transmitting, at the general function module, the operation information to an operation function module (Fig. 1, operation interface screen processing unit 13) to process the operation information (see "managing the maintenance data" recited in col. 2, lines 57-67); and transmitting, at the general function module, the maintenance information to a maintenance module (Fig. 1,

operation maintenance function processing unit 12) to process the maintenance information (see "processing the maintenance data" recited in col. 2, lines 60-64).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rai and LeCren by using the features, as taught by Park, in order to performs all operation maintenance functions (Park: col. 1, lines 18-22).

8. Claims 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent No. 6,421,714) in view of LeCren (US Patent No. 6,999,320) and further in view of Park et al. (US Patent No. 7,058,019) and Withmore et al. (US Patent Application Publication No. 2006/0203804; hereinafter Withmore).

Rai, LeCren, and Park disclose the claimed limitations in paragraph 7 above. Rai, LeCren, and Park do not disclose the following features: regarding claim 4, wherein the operation function module comprises: a system loading manager for handling system loading; a configuration data manager for handling configuration management; and a statistics and measurement manager for handling a statistics and measurement function; regarding claim 5, wherein the maintenance function module comprises: a status manager for monitoring the status of processors of the system, various links and various devices; a fault manager for collecting failures and alarms of the system, and for reporting them to an operator; and a test manager for testing devices and processing test calls.

Withmore discloses method and apparatus for routing data over multiple wireless networks (see the Title) comprising the following features.

Regarding claim 4, wherein the operation function module (Fig. 2, RNC 20) comprises: a system loading manager for handling system loading (see “processing load” recited in para. [0166], page 15); a configuration data manager for handling configuration management (see “configuration management” recited in para. [0155], page 14); and a statistics and measurement manager for handling a statistics and measurement function (see “system statistics management” recited in para. [0155], page 14).

Regarding claim 5, wherein the maintenance function module (see “operator” recited in para. [0150], page 13) comprises: a status manager for monitoring the status of processors of the system, various links and various devices (see “monitors the status of the associated wireless network and client communications link” recited in para. [0012], page 1); a fault manager for collecting failures and alarms of the system, and for reporting them to an operator; and a test manager for testing devices and processing test calls (see “field test and analyze” recited in para. [0150], page 13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rai, LeCren, and Park by using the features, as taught by Withmore, in order to perform all operation functions.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 14 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Park et al. (US Patent No. 7,058,019).

Park discloses method of transmitting data between compact control stations using Ethernet (see the Title) comprising the following features.

Regarding claim 14, in an apparatus for operating and maintaining a private mobile communication service system (see "a digital mobile communication system recited in col. 1, line 16) using an internet protocol (IP) network (see Ethernet recited in the Abstract), the private mobile communication service network having a private base station controller (PBSC) (see "base station" recited in col. 1, lines 16-17) and a base station transceiver subsystem (BTS) (see "base station" recited in col. 1, lines 16-17); a wireless system manager (WSM) (see "base station managers" recited in col. 1, lines 16-17) comprising: operation function module (Fig. 1, operation interface screen processing unit 13) means for receiving operation information (see transmitting/receiving operation maintenance data recited in col. 2, lines 65-67), for providing operation functions including at least one of loading, configuration management and statistics measurement, and for creating and outputting an operation control signal (see "managing the maintenance data" recited in col. 2, lines 64-67); maintenance function module (Fig. 1, operation maintenance function processing unit 12) means for receiving operation/maintenance information (see "maintenance data



transmitted/received" recited in col. 2, lines 60-63), for providing a maintenance function including at least one of system status monitoring, system failure control and system tests, and for creating and outputting an operation/maintenance control signal (see processing maintenance data and transmitting to the operator interface screen processing unit 13 recited col. 2, lines 60-67); and general function module (Fig. 1, network matching unit 11) means for receiving the operation/maintenance information (see receiving operation maintenance data from controller 20 recited in col. 2, lines 57-60), for outputting operation information to the operation function module means (see operator interface screen processing unit 13 receives maintenance data from network matching unit 11), for transmitting maintenance information to the maintenance function module means (see operation maintenance function processing unit 12 receives maintenance data from network matching unit 11), for receiving the operation control signal from the operation module means (see receiving maintenance data from operator interface screen processing unit 13 recited in col. 2, lines 64-67) and the operation/maintenance control signal from the maintenance module means (see receiving maintenance data from operation maintenance function processing unit 12 recited in col. 2, lines 60-64), and for transmitting the operation/maintenance control signal through the IP network (see transmitting operation maintenance data using the Ethernet recited in col. 2, lines 57-60).

Regarding claim 17, wherein the general function module (Fig. 1, network matching unit 11) comprises: a WSM initialization manager for creating and managing application parts required for operation of the WSM (see network matching unit 11

initiated connection to controller 20 recited in col. 8-11); a local area network (LAN) interface manager for processing a LAN connection, and data transmission and reception with the system (see "Ethernet" recited in col. 2, lines 57-60); and a user interface manager for providing a graphic user matching function (see "operator interface function" recited in col. 4, lines 28-30).

11. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Rai et al. (US Patent No. 6,421,714).

12. Rai discloses efficient mobility management scheme for a wireless internet access system (see the Title) comprising the following features.

Regarding claim 20, in an apparatus for operating and maintaining a private mobile communication service system (Fig. 2) using an internet protocol (IP) network (see "capable of routing internet protocol" recited in col. 6, lines 18-21), the private mobile communication service network having a private base station controller (pBSC) (Fig. 4, Base Station 64) and a base station transceiver subsystem (BTS) (Fig. 4, Base Station 64); a base station main controller main processor (BMP) (Fig. 4-6, Wireless Hubs 84) comprising: a local area network (LAN) interface for providing an interface with a LAN to allow an IP communication (see "Ethernet" recited in col. 11, lines 13-15); an operation/maintenance information transmission unit (Fig. 4-6, Wireless Hubs 84) responsive to reception of operation/maintenance information for ascertaining a link address (see frames are relayed to MSCIWF by MAC address filter table recited in col. 12, lines 32-36), and for transmitting the operation/maintenance information (see frames are relayed to MSCIWF lines 32-36) through the LAN interface (see "Ethernet" recited in

col. 11, lines 13-15) when the link address is a certain address (see frames are relayed to MSCIWf by MAC address filter table recited in col. 12, lines 32-36); and an operation/maintenance control signal transmission unit Fig. 4-6, Wireless Hubs 84) for receiving an operation/maintenance control signal through the LAN interface (see "Ethernet" recited in col. 11, lines 13-15), and for transmitting the operation/maintenance control signal to a hardware alarm collection unit (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the base station).

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US Patent No. 7,058,019) in view of Withmore et al. (US Patent Application Publication No. 2006/0203804).

Park discloses the claimed limitations in paragraph 10 above. Park does not disclose the following features: regarding claim 15, wherein the operation function module means comprises: a system loading manager for handling system loading; a configuration data manager for handling configuration management; and a statistics and measurement manager for handling a statistics and measurement function; regarding

claim 16, wherein the maintenance function module means comprises: a status manager for monitoring the status of processors of the system, various links and various devices; a fault manager for collecting various failures and alarms of the system and reporting them to an operator; and a test manager for testing various devices and processing test calls

Withmore discloses method and apparatus for routing data over multiple wireless networks (see the Title) comprising the following features.

Regarding claim 15, wherein the operation function module (Fig. 2, RNC 20) comprises: a system loading manager for handling system loading (see “processing load” recited in para. [0166], page 15); a configuration data manager for handling configuration management (see “configuration management” recited in para. [0155], page 14); and a statistics and measurement manager for handling a statistics and measurement function (see “system statistics management” recited in para. [0155], page 14).

Regarding claim 16, wherein the maintenance function module (see “operator” recited in para. [0150], page 13) comprises: a status manager for monitoring the status of processors of the system, various links and various devices (see “monitors the status of the associated wireless network and client communications link” recited in para. [0012], page 1); a fault manager for collecting failures and alarms of the system, and for reporting them to an operator; and a test manager for testing devices and processing test calls (see “field test and analyze” recited in para. [0150], page 13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Park by using the features, as taught by Withmore, in order to perform all operation functions.

15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US Patent No. 7,058,019) in view of Rai et al. (US Patent No. 6,421,714) and LeCren (US Patent No. 6,999,320).

Park discloses the claimed limitations in paragraph 10 above. Park does not disclose the following features: regarding claim 18, said apparatus further comprising a hardware alarm collection unit mounted on the pBSC for collecting the operation/maintenance information from at least one board and outputting the operation/maintenance information, and for receiving the operation/maintenance control signal from said at least one board and generating a reset signal for said at least one board.

Rai discloses efficient mobility management scheme for a wireless internet access system (see the Title) comprising the following features.

Regarding claim 18, said apparatus further comprising a hardware alarm collection unit (see Fig. 4-6, Access Points 82) mounted on the pBSC (Fig. 4, Base Station 64) for collecting the operation/maintenance information (see "take MAC layer frames" recited in col. 10, lines 50-51) from at least one board (see "antenna" recited in col. 10, lines 42-44) and outputting the operation/ maintenance information (see "relay them to a wireless hub" recited col. 10, lines 50-51), and for receiving the operation/maintenance control signal from said at least one board (Fig. 14, Agent

Solicitation and Registration Request are sent to Foreign Agent which is in a base station (col. 7, lines 50-51)).

Park does not disclose the following features: regarding claim 18, generating a reset signal for said at least one board.

LeCren discloses dynamic reallocation of processing resources for redundant functionality (see the Title) comprising the following features.

Regarding claim 18, generating a reset signal for said at least one board (see "reset of the board or card" recited in col. 5, lines 37-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Park by using the features, as taught by Rai and LeCren, in order to restore failures of the board or card due to software error (LeCren: col. 5, lines 37-39).

16. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US Patent No. 7,058,019) in view of Rai et al. (US Patent No. 6,421,714).

Park discloses the claimed limitations in paragraph 10 above. Park does not disclose the following features: regarding claim 19, said apparatus further comprising a base station controller main processor (BMP) responsive to the operation/maintenance information being received for ascertaining a link address and for transmitting the operation/maintenance information when the link address is the WSM, and responsive to the operation/maintenance control signal being received from the WSM through the IP network for transmitting the operation/maintenance control signal to a hardware alarm connecting unit.

Rai discloses efficient mobility management scheme for a wireless internet access system (see the Title) comprising the following features.

Regarding claim 19, said apparatus further comprising a base station controller main processor (BMP) (Fig. 4-6, Wireless Hubs 84) responsive to the operation/maintenance information being received for ascertaining a link address and for transmitting the operation/maintenance information when the link address is the WSM (see frames are relayed to MSCIWf by MAC address filter table recited in col. 12, lines 32-36), and responsive to the operation/maintenance control signal being received from the WSM (Fig. 14, see Foreign Registration Server receives and processes signals to Foreign Agent in the base station), through the IP network (see "capable of routing internet protocol" recited in col. 6, lines 18-21) for transmitting the operation/maintenance control signal to a hardware alarm connecting unit (Fig. 14, see Foreign Registration Server sends back signals to Foreign Agent in the base station).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Park by using the features, as taught by Rai, in order to perform a routing function.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Q. Tran whose telephone number is (571) 272-9737. The examiner can normally be reached on Mon-Fri: 7:30 am - 5 pm, off alternative Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TQT

KWANG BIN YAO  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kwag Bin Yao', is written over the printed name and title.